minor side effects and a relatively low recurrence rate. The efficacy was not significantly different compared to previous experience,[7 8] although the total dose and the cost were halved. Because of its teratogenic effect, the use of isotretinoin as first line therapy for genital warts in women of reproductive age is unacceptable. Selection of patients to be treated and strict contraceptive measures are of crucial importance. In conclusion, low dose oral isotretinoin may represent an efficacious, safe, and cost effective alternative systemic therapy for cervical RCA.

CONTRIBUTORS

SG designed and organised the study; ACK analysed the results, performed the statistical analysis, and prepared the manuscript; CG and EB were responsible for clinical evaluation an follow up and recorded the data; AM performed the gynaecological examination.

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REFERENCES

1 **Garland SM**. Human papillomavirus update with a particular focus on cervical disease. *Pathology* 2002;**34**:213–24.
2 **Armstrong DKB**, Maw RD, Dinsmore WW, *et al*. Combined therapy trial with interferon alpha-2a and ablative therapy in the treatment of anogenital warts. *Genitourin Med* 1996;**72**:103–7.
3 **Zouboulis CC**. Retinoids—which dermatological indications will benefit in the near future? *Skin Pharmacol Appl Skin Physiol* 2001;**14**:303–15.
4 **Sporn MB**, Roberts AB. Cervical dysplasia regression induced by all-trans-retinoic acid. *J Natl Cancer Inst* 1994;**86**:476–7.
5 **Meyskens FL**. Recent advances in the management of cancer with retinoids. *Ann Oncol* 1994;**5**(Suppl 9):529–32.
6 **Olsen EA**, Kelly FF, Vollmer RT, *et al*. Comparative study of systemic interferon alfa-nl and isotretinoin in the treatment of resistant condylomata acuminata. *J Am Acad Dermatol* 1989;**20**:1023–30.
7 **Tsambaos D**, Georgiou S, Monastirli A, *et al*. Treatment of condylomata acuminata with oral isotretinoin. *J Urol* 1997;**158**:1810–2.
8 **Cardamakis EK**, Kotoulas IG, Dimopoulos DP, *et al*. Comparative study of systemic interferon alfa-2a with oral isotretinoin and oral isotretinoin alone in the treatment of recurrent condylomata acuminata. *Arch Gynecol Obstet* 1996;**258**:35–41.
9 **Katz RA**. Isotretinoin treatment of recalcitrant warts in an immunosuppressed man. *Arch Dermatol* 1986;**122**:19–20.
10 **Lutzner MA**, Blanchet-Bardon C, Puissant A. Oral aromatic retinoid (RO 10-9359) treatment of two patients suffering with the severe form of epidermodysplasia verruciformis. In: Orfanos CE, Braun-Falco O, Farber EM, eds. *Retinoids: advances in basic research and therapy*. New York: Springer-Verlag, 1981:407–10.
11 **Stellmach V**, Leask A, Fuchs E. Retinoid-mediated transcriptional regulation of keratin genes in human epidermal and squamous cell carcinoma cells. *Proc Natl Acad Sci USA* 1991;**88**:4582–6.
12 **Oridate N**, Lotan D, Follen Mitchell M, *et al*. Inhibition of proliferation and induction of apoptosis in cervical carcinoma cells by retinoids: implications for chemoprevention. *J Cell Biochem* 1995;(Suppl 23):80–6.

ECHO

Intestinal B cells in AIDS

Please visit the *Sexually Transmitted Infections* website [www.stijournal.com] for a link to the full text of this article.

There have been few studies of intestinal mucosal immunity in patients with HIV infection. Some have reported low numbers of IgA producing immunocytes in the gut mucosa but others have found normal numbers. Now researchers in Norway have demonstrated hyperactivation of intestinal B cells in patients with AIDS.

They studied 31 patients (25 men) aged 26–52 years with HIV-1 infection (25 with AIDS). Eighteen were homosexual men and eight intravenous drug users; five had acquired the infection heterosexually. Duodenal biopsy was performed on all 31 patients and specimens were examined by in situ two colour immunofluorescence staining to quantify mucosal immunoglobulin (Ig) class and subclass producing immunocytes (plasmablasts and plasma cells). Eleven healthy, HIV seronegative, age matched controls volunteered for duodenal biopsy.

The median proportions of Ig class specific duodenal immunocytes were similar in patients and controls (patients: IgA 74.6%, IgM 19.5%, IgG 3.4%; controls: IgA 74%, IgM 21%, IgG 3.4%). Among patients there was a significant increase of Ig producing cells compared with controls (175 *v* 120 cells per mucosal unit) due to an increase in IgA producing cells. Patients with Kaposi's sarcoma, *Pneumocystis carinii* pneumonia, cryptosporidiosis, or candidiasis had the greatest numbers of IgA producing cells. The proportion of IgG1 immunocytes in relation to total IgG was also increased in the mucosa of patients (median 81.8% of IgG producing cells) compared with controls (68.4%). Patients on highly active antiretroviral therapy (HAART) had fewer IgA producing cells (median 112/mucosal unit) than patients on no antiretroviral treatment (181/mucosal unit). Patients on two nucleoside analogues had intermediate numbers of IgA producing cells (124/mucosal unit).

Patients with advanced HIV-1 infection have increased numbers of IgA and IgG1 producing cells in duodenal mucosa. This finding is particularly marked in patients with secondary infections. Treatment with HAART may reverse the changes. It is suggested that these findings could help in the development of mucosal AIDS vaccines.

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